Omnitron Systems Technology, Inc.

iConverter®

1-Module Redundant Chassis

User Manual

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1.0 INTRODUCTION

1.1 General Description

The *iConverter* 1-Module chassis features a number of redundant power inputs, UTP port and alarm options. It supports primary and secondary power input options and variety of power connection types. By utilizing the optional UTP ports, the unit can be powered from a connected Power Sourcing Equipment (PSE). Optional contact closure sensors are provided for connection to external alarm indicators. By installing a managed *iConverter* module into the chassis, the chassis functions can be remotely managed by Telnet and SNMP software such as Omnitron's *NetOutlook*® Management software.*

1.2 About This Manual

This document supports release 1.1 of the *iConverter* 1-Module Redundant chassis.

**iConverter* management module and *NetOutlook* must be at version 3.3c or higher.

1.3 Chassis Model Numbers

			Primary Power				Backup Power		
Model	Contact Closure	Two UTP RJ-45 Ports	Low Voltage DC-Barrel (9-24V)	Low Voltage DC-Terminal (9-24V)	High Voltage DC-Terminal (24-60V)	RJ-45 POE	Low Voltage DC-Barrel (9-24V)	Low Voltage DC-Terminal (9-24V)	AC/DC Power Supply
8245-111			x				x		Two US
8245-112			x				x		Two Univ.
8246-111		x	x				x		Two US
8246-112		x	x				x		Two Univ.
8246-511		x				x	x		One US.
8246-512		x				x	x		One Univ.
8247-111	x		x				x		Two US
8247-112	x		x				x		Two Univ.
8247-121	x		x					x	One US
8247-122	x		x					x	One Univ.
8247-220	x			x				x	-
8247-311	x				x		x		One US.
8247-312	x				x		x		One Univ.
8247-320	x				x			x	-
8248-111	x	x	x				x		Two US
8248-112	x	x	x				x		Two Univ.
8248-121	x	x	x					x	One US.
8248-122	x	x	x					x	One Univ.
8248-220	x	x		x				x	-
8248-311	x	x			x		x		Two US.
8248-312	x	x			x		x		Two Univ.
8248-320	x	x			x			x	-
8248-511	x	x				x	x		One US.
8248-512	x	x				x	x		One Univ.
8248-520	x	x				x		x	-

Table 1: Chassis Model Numbers

2.0 INSTALLATION

2.1 Chassis Installation

The *iConverter* 1-Module Redundant chassis is designed to accommodate wall-mount or tabletop installations. For wall-mounting, the 8249-0 *iConverter* Wall-Mount kit (sold separately) is designed to attach the chassis to a wall, backboard or other flat surface.

For tabletop installations, place the unit on a flat level surface. Attach the rubber feet to the bottom of the chassis to prevent the unit from sliding. Make sure the unit is placed in a safe, dry and secure location.

For external power installation and configuration, see section 3.0.

2.2 Module Installation

The *iConverter* 1-Module Redundant chassis supports a variety of managed and unmanaged *iConverter* modules. When installing a module into the chassis, carefully slide the module into the open slot. Align the module with the installation guides and ensure that the module is firmly seated against the backplane. Secure the module by fastening the front panel thumbscrew (push in and turn clockwise to tighten) to the chassis front.

Figure 1: Module Installation

Note: *iConverter* plug-in modules are hot-swappable and can be installed into any chassis in the *iConverter* family. For additional information regarding *iConverter* module installation, please consult the specific module's user manual.

2.3 Fiber Installation

Connect an appropriate multimode or single-mode fiber cable to the fiber port of the installed module. It is important to make sure that the transmit (TX) is attach to the receive side of the device at the other end and the receive (RX) is attach to the transmit side.

Single-fiber (SF) media converter models operate in pairs. The TX wavelength must match the RX wavelength at the other end and the RX wavelength must match the TX wavelength at the other end.

For additional information regarding *iConverter* module fiber installation, please consult the specific module's user manual.

3.0 CONFIGURATION

3.1 Redundant Power Configurations

The chassis support multiple redundant load sharing power configurations. The power is connected to the back of the chassis with connectors labeled “Pwr1” and “Pwr2”. “Pwr1” is the primary power connection and “Pwr2” is the backup. There are four primary power options and two backup options. The combinations of primary and backup power include low voltage barrel connector, low voltage terminal, high voltage terminal and PoE from the UTP ports. The manner in which the power is connected will depend on the model selected. Refer to Table 1 for the specific power input options supported on each chassis model.

3.1.1 AC/DC Power Option (Low Voltage Barrel)

To power the chassis using AC/DC adapter, connect the AC/DC adapter to the AC outlet. Then connect the barrel plug at the end of the wire on the AC/DC adapter to the 2.5mm DC barrel connector on the chassis. A wire saddle is located below each barrel connector to secure the power line and prevent accidental removal. Repeat the process if the chassis was ordered with the additional low voltage barrel option.

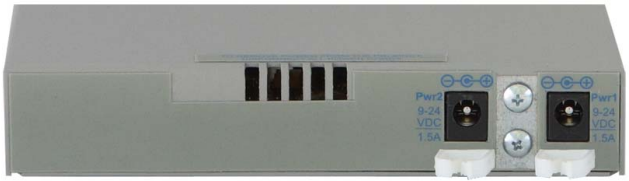

Figure 2: Redundant AC/DC Configuration

Note: The chassis must be used with an Omnitron supplied AC/DC Power Adapter.

Confirm that the unit has powered up properly by checking the power status LED located on the front of the chassis. See Section 3.2 for the details concerning the operation and definition of the front panel LEDs.

3.1.2 24 VDC Option (Low Voltage Terminal)

The 8247-x2x, 8247-2xx, 8248-x2x and the 8248-2xx chassis require 9-24 VDC/1.5 Amps power input. The appropriate overload protection should be provided at the power source. To power the chassis using 24 VDC power source, locate the 24 VDC circuit breaker and switch the circuit breaker to the off position. Prepare the power cable using a two-conductor insulated wire with a 14 AWG gauge (not supplied). Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cable to the chassis by fastening the stripped ends to the 24 VDC power connector. Repeat the process if the chassis was ordered with the additional low voltage terminal option.

Warning: Note the wire colors used in making the positive, negative and ground connections. Use the same color assignment for the connection at the circuit breaker.

Note: The 9-24VDC power input can accept an input voltage up to 28VDC.

Connect the power wires to the circuit breaker and switch the circuit breaker ON. Confirm that the unit has powered up properly by checking the power status LED located on the front of the installed chassis. See Section 3.2 for the details concerning the operation and definition of the front panel LEDs.

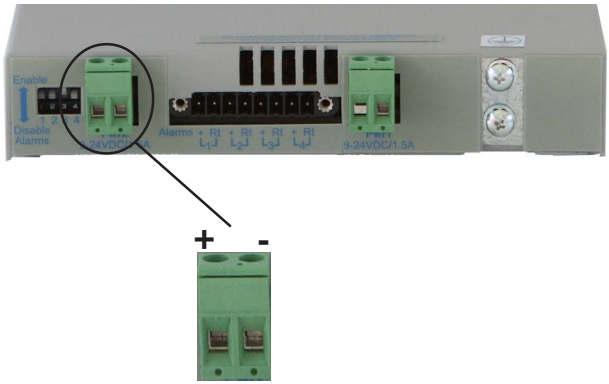

Figure 3: Redundant 24 VDC Configuration

3.1.3 48 VDC Option (High Voltage Terminal)

The DC power source should be available within 5 ft. of the chassis. The over current protection for the connection with centralized DC shall be provided in the building installation and shall be a UL listed breaker rated at 20 Amps, and installed per the National Electrical Code, ANSI/NFPA-70. The 8247-3xx and the 8248-3xx require 24-60 VDC/0.6 Amps power. The appropriate overloading protection should be provided on all DC power source outlets utilized.

WARNING: Only a DC power source that complies with safety extra low voltage (SELV) requirements can be connected to the DC-input power.

WARNING REGARDING EARTHING GROUND

This equipment shall be connected to the DC supply system earthing electrode conductor or to a bonding jumper from an earthing terminal bar or bus to which the DC supply system earthing electrode is connected.

This equipment shall be located in the same immediate area (such as adjacent cabinets) as any other equipment that has a connection between the earthed conductor of the same DC supply circuit and the earthing conductor, and also the point of earthing of the DC system. The DC system shall not be earthed elsewhere.

The DC supply source is to be located within the same premises as this equipment.

There shall be no switching or disconnecting devices in the earthed circuit conductor between the DC source and the earthing electrode conductor.

To power the chassis using a 48 VDC power source, locate the DC circuit breaker and switch the circuit breaker to the OFF position. Prepare a power cable using a three conductor insulated wire (not supplied) with a 14 AWG gauge. Cut the power cable to the length required. Strip approximately 3/8 of an inch of insulation from the power cable wires. Connect the power cables to the chassis by fastening the stripped ends to the DC power connector.

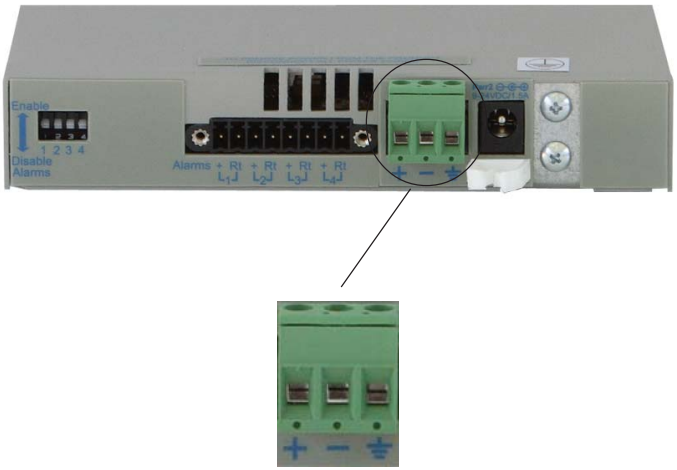

Figure 4: 48 VDC and AC/DC Redundant Power Configuration

WARNING: Note the wire colors used in making the positive, negative and ground connections. Use the same color assignment for the connection at the circuit breaker.

Connect the power wires to the circuit breaker and switch the circuit breaker ON. Confirm that the unit has powered up properly by checking the power status LED located on the front of the installed chassis. See Section 3.2 for the details concerning the operation and definition of the front panel LEDs.

3.1.4 Power over Ethernet (PoE) Option

On models with the PoE feature (see Table 1), UTP Port A (the left port on the front of the chassis) can be configured as a PoE Powered Device (PD). It accepts power from a UTP-based Power Sourcing Equipment (PSE) and supports the following PoE standards:

1. IEEE 802.3af-2003 Alternative A – power over data wires
2. IEEE 802.3af-2003 Alternative B – power over spare wires
3. Pre-Standard Cisco PoE – power over spare wires, with reversed polarity (older Cisco switches)

The following table summarizes the UTP pinouts for each of the three PoE Standards supported by this product.

Standard	Source Voltage	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8
IEEE 802.af using data pairs (A)	48 VDC protected	RX, DC+	RX, DC+	TX, DC-	Spare	Spare	TX, DC-	Spare	Spare
IEEE 802.af using spare pairs (B)	48 VDC protected	RX	RX	TX	DC+	DC+	TX	DC-	DC-
Pre-Standard Cisco	48 VDC protected	RX	RX	TX	DC-	DC-	TX	DC+	DC+

Table 2: UTP PoE Connections

UTP Port B does not support the PoE feature.

3.2 LED Indicators

The following table details the LED status indicators:

LED	Function	Color	Legend	Off State	On / Blinking state
1	Power Supply 1 LED	Green	PWR1	No power applied to power source 1	Solid: Power applied to power source 1 0.5 Hz Blinking: Power applied to source 1 and contact closure is in the alarm state
2	Port A Link/Activity	Green	Lnk/Act	No link on Port A	On: UTP A linked at 10 Mbps or 100 Mbps 10 Hz Blinking: Rx and Tx 10 or 100 Mbps data activity on Port A
3	Port A Speed	Green	10/100	If Port A link is active, the port is linked at 10 Mbps	On: UTP Port linked at 100 Mbps
4	Power Supply 2 LED	Green	PWR2	No power applied to power source 2	Solid: Power applied to power source 2 0.5 Hz Blinking: Power applied to source 2 and contact closure is in the alarm state
5	Port B Link/Activity	Green	Lnk/Act	No link on Port B	On: UTP B linked at 10 Mbps or 100 Mbps 10 Hz Blinking: Rx and Tx 10 or 100 Mbps data activity on Port B
6	Port B Speed	Green	10/100	If Port B link is active, the port is linked at 10 Mbps	On: UTP Port B linked at 100 Mbps

Table 3: LED Definitions

3.3 Contact Closure Sensors

On models with the contact closure sensor feature (see Table 1), the chassis provides an optional 8-pin connector (4 contact sensors) on the back of the chassis that can be used to sense the state of external alarm conditions. Each of the four sensor pins can detect if the wired circuit is open or closed, or has high or low voltage from the external equipment. A DIP-switch located on the back of the chassis enables or disables alarm reporting. If no external equipment is connected to the 8-pin connector, it is important to disable the alarm reporting by configuring each DIP-switch to the DISABLE position. See Figure 5 for the location of the switch and terminal connector.

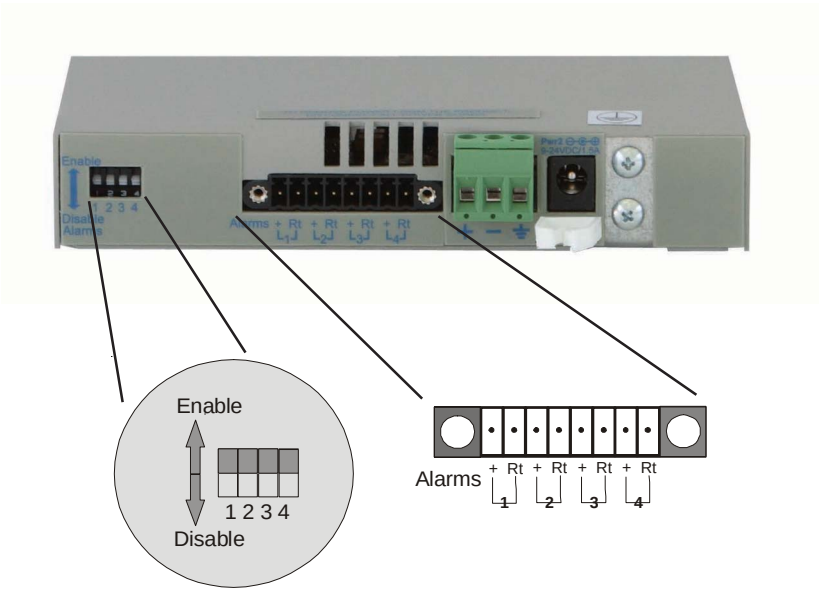

Figure 5: DIP-switch and Alarm Terminal Details

The table describes the function of each switch.

DIP-Switch Position	Function	State	Reporting Indication
1	Alarm 1	Down = Disabled	No alarm reporting
		Up = Enabled	Front panel alarm indication
2	Alarm 2	Down = Disabled	No alarm reporting
		Up = Enabled	Front panel alarm indication
3	Alarm 3	Down = Disabled	No alarm reporting
		Up = Enabled	Front panel alarm indication
4	Alarm 4	Down = Disabled	No alarm reporting
		Up = Enabled	Front panel alarm indication

Table 4: Contact Sensors - DIP-switch Configuration

NOTE: Not all chassis are equipped with the contact sensors. Internally, all signal return (“Rt”) pins are connected.

The 8-pin connector has the following pin configuration:

Pin#	Description	Closed Circuit (low voltage)	Open Circuit (high voltage)
1	Sensor 1 ("+")	No Alarm	Alarm
2	Signal Return ("Rt")		
3	Sensor 2 ("+")	No Alarm	Alarm
4	Signal Return ("Rt")		
5	Sensor 3 ("+")	No Alarm	Alarm
6	Signal Return ("Rt")		
7	Sensor 4 ("+")	No Alarm	Alarm
8	Signal Return ("Rt")		

Table 5: Contact Closure Sensors Pinout Configuration

3.4 Ethernet Backplane

The chassis contains two Ethernet backplane buses (A and B) that operate at 10/100Mbps. Both buses are enabled by default. When an *iConverter* module that features Ethernet backplane connectivity is installed in the chassis, the A bus connects directly to UTP Port A, and the B bus connects directly to UTP Port B as shown in Figure 6.

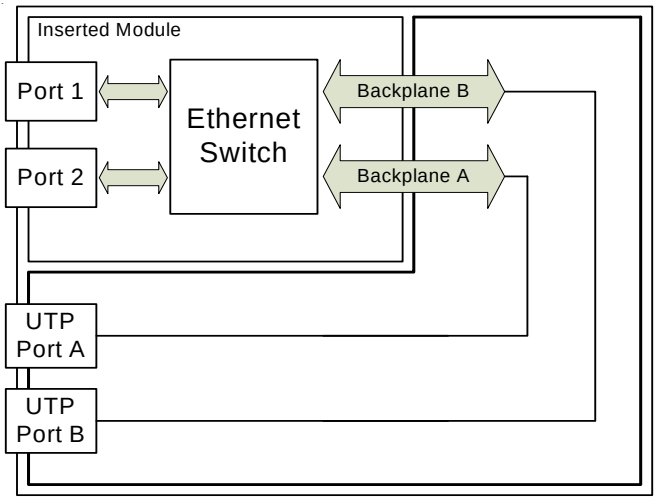

Figure 6: Backplane Connectivity

The data traversing across the Ethernet backplane can be controlled by configuring the installed *iConverter* module. See the specific *iConverter* module's User Manual for additional details.

4.0 CHASSIS MANAGEMENT

4.1 Overview

The 1-Module Redundant chassis features configurable options and status information depending on the model. Configurable parameters and status information available through the serial console port on the installed *iConverter* Management Module are:

- Contact Closure Alarm notification - Enable/disable (physical DIP-switches)
- Port A/B Control - UTP auto-negotiation, 10/100 and Full/Half-Duplex
- Pause Control - Enable/disable
- Port Access Control - Enable/disable
- Power Supply 1/2 - Voltage, current and temperature

4.1.1 Configuring and Monitoring the Chassis

Remote configuration of the chassis is provided by installing an *iConverter* Management Module such as a 10/100M. To configure, attach the Management Module to a RS-232 equipped computer with terminal emulation software such as HyperTerminal. The Management Module Serial Console Port (DCE) is a mini DIN-6 female connector which can be changed to a DB-9 connector with the adapter included with the module (Part #8082-0). Attach the ends of serial cable to the serial port of the PC and the Serial Console Port of the Management Module. This is a standard asynchronous serial interface

Start HyperTerminal and select the correct COM Port in the HyperTerminal "Connect To:" window.

Set the PC's serial port to the following:

Bits Per Second	57,600
Stop Bits	1
Data Bits	8
Parity	NONE
Hardware Flow Control	NONE

Power the chassis containing the Management Module and press <*ENTER*> to bring up a command line prompt on the attached PC.

The ***Management Options*** screen will be displayed.

```
Management Options                iConverter, Serial Agent

 Network Management
 1:  Chassis and Module Management
 2:  Set Module Identifier
 Management Module Preferences
 3:  IP and Control Preferences
 4:  SNMP Preferences
 5:  Abandon Preference Changes
 6:  Save Preference Changes
 7:  Restore to Factory Defaults
 8:  Restart Management Module
 9:  Other Networking Features
 Management Module Maintenance
 10: Firmware Update
 11: Set Date/Time

 IP Address     = 192.168.1.220
 Chassis Number = 1

Enter Choice, (H)elp, E(x)it >
```

Figure 7: Management Option Screen

A new Management Module does not have a password, and will skip the ***Password Entry*** screen and go straight to the ***Management Options*** screen.

If a password has been set, the ***Password Entry*** screen will be displayed. Type the password and press <*ENTER*>, the ***Management Options*** screen will be displayed.

```
Omnitron Systems Technology, Inc.   iConverter, Serial Agent
Copyright 2001-2007 OST, Inc.
Password Entry

------------------------------------------------------------
Omnitron Systems Technology            Technical Support:
                                       (949) 250-6510
140 Technology #500   Sales/Products:  (800) 675-8410
Irvine, CA 92618      On the web at:
                      www.omnitron-systems.com
------------------------------------------------------------

IP Address    192.168.1.220
MAC  00:00:00:00:00:00









[xxxxxxxx]
Please enter the password >
```

Figure 8: Password Screen

To access the chassis configuration screens, select *1* at the ***Management Options*** screen, press <*ENTER*>. The ***Chassis View*** screen will be displayed. From the ***Chassis View*** screen, select the slot number corresponding to the chassis.

NOTE: Chassis configuration is also available using *NetOutlook*.

```
Chassis View 1-Module Redundant

 Chassis Number = 7

 Slot   Model      Type              Module Identifier
 1      8959-0     2FXM
 2      8248-512   1-Module Redundant

 Module to View(1-2), Mgmt Opt(0),(R)eset, (H)elp, E(x)it >2
```

Figure 9: Chassis View Screen

The ***Module Screen*** (DIP-switch control shown) provides general information concerning the configuration and status of the module. The screen displays the model and serial numbers, hardware and software revisions, as well as the condition of the LEDs, Alarm Indicators and DIP-switches. The DIP-switches *1 - 4* correspond with the physical switches on the back of the chassis. These switches can be changed from the ***Module Screen*** by selecting the appropriate switch number. DIP-switches *9 - 15* can only by configured from the ***Module Screen*** options. Select the appropriate option to change the DIP-switch setting.

```
Module Screen - iConverter 1-Module Redundant
 Identifier -

Switch       ON Condition    OFF Condition      H/W   Actual
 1:          Alarm 1 Enable  Alarm 1 Disable    On    On
 2:          Alarm 2 Enable  Alarm 2 Disable    Off   Off
 3:          Alarm 3 Enable  Alarm 3 Disable    Off   Off
 4:          Alarm 4 Enable  Alarm 4 Disable    Off   Off
 5:          Not Available
 6:          Not Available
 7:          Not Available
 8:          Not Available

Soft Switch  ON Condition    Off Condition      State
 9:          Port A Manual   Port A AN Mode     Off
 10:         Port A 10 Mbps  Port A 100 Mbps    Off
 11:         Port A HDX      Port A FDX         Off
 12:         Port B Manual   Port B AN Mode     Off
 13:         Port B 10 Mbps  Port B 100 Mbps    Off
 14:         Port B HDX      Port B FDX         Off
 15:         Pause Enabled   Pause Disabled     Off
 16:         Not Available

 Toggle Switch(1-16), ....... (S)tatus, Port(C)tl >
```

Figure 10: Module Screen - Showing DIP-switches Only

The ***Module Screen*** also provides access to the status and control screen. To select the ***Status Screen***, enter *S.*

```
Module Screen - iConverter 1-Module Redundant
 Identifier -

 Chassis Number      =  7
 Slot Number         =  2
 Model Number        =  8248-512

 Serial Number       =  xxxxxxxx
 Manufacturing Date  =  xxxxxxxx
 Product Revision    =  x
 Software Revision   =  x.x

 P1 Volts    =  0.0 V                P2 Volts    =  3.6 V
 P1 Current  =  0.0 A                P2 Current  =  0.9 A
 Temp        =  113 F  45 C
 PoE         =  Installed
 Fan         =  Not Installed

 Alarm 1     =  On
 Alarm 2     =  On
 Alarm 3     =  On
 Alarm 4     =  On

 Enter Choice, Previous Screen(0), (H)elp, E(x)it >
```

Figure 11: Status Screen

For models with UTP ports, the Control Screen is available to enable or disable Port A and Port B. To select the ***Control Screen***, enter *C.*

```
Module Screen - iConverter 1-Module Redundant
 Identifier -

 Chassis Number    =  7
 Slot Number       =  2
 Model Number      =  8248-512

 Port Access Control Setup
 -------------------------
 1: Port A Enable          On
 2: Port B Enable          On

 Port VLAN Path Setup
 --------------------
 3: Port A to Backplane A   On
 4: Port A to Backplane B   Off
 5: Port B to Backplane A   Off
 6: Port B to Backplane B   On
 7: Port A to Port B        Off




 Enter Choice, Previous Screen(0), (H)elp, E(x)it >
```

Figure 12: Control Screen

5.0 APPLICATIONS

5.1 Battery Backup with Alarms

When the chassis is used with a battery backup power system, the alarm contact sensor can be used to report conditions associated with the backup power system. In this configuration, the chassis can provide a managed power fault detection system.

The figure below depicts an APC PowerShield battery backup unit connected to the chassis using the 8-pin terminal connector on the back of the chassis, In this configuration, the chassis is monitoring the power conditions of the APC units and will report any failures to the network management system.

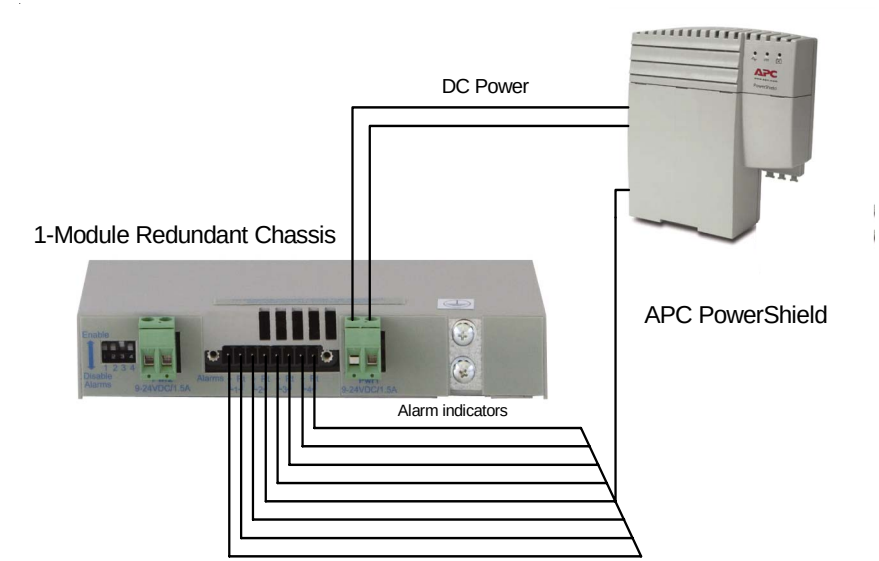

Figure 13: Redundant Chassis Power Utilizing the Contact Closure Sensors

The four sensors are compatible with APC PowerShield product. The table below defines the pinouts for both units.

APC Pin #	iConverter Chassis Pin #	Description	Closed Circuit	Open Circuit
3	2	Signal Return	N/A	N/A
4	1	Power Source	Utility Power	Battery Power
5	3	Battery Reserve	Battery Full-Charged	Battery Fails Self-Test
6	5	Battery Condition	Battery Present	Battery Missing
7	7	Low Battery	Battery Near Capacity	Battery <20% Capacity

Table 6: APC PowerShield Alarm Contact Configuration

5.2 Contact Closure Sensor Configuration

The contact closures can be used to alert the network management system of problems associated with the remote location. The contact closure sensor can also detect the opening and closing of a switch, such as a equipment door being opened or closed. The figure below illustrates this application.

Figure 14: Chassis Configured for Open Door Alarm

6.0 SPECIFICATIONS

Description	***iConverter*** 1-Module Redundant-Power Chassis
Ports	2 x RJ-45
Protocols	10Base-T, 100Base-Tx with 1536 max. frame size
Cable Types	
UTP	EIA/TIA 568A/568B
Connector Types	
UTP	RJ-45
Contact Closure Sensors	Field-wireable 16-24 AWG
Power Requirements	
Low Voltage DC Power	9 - 24 VDC 1.5A @ 9.0VDC
Low Voltage DC Power Connector	2.5mm Barrel Connector or Field-wireable 16-20 AWG Terminal Connector
High Voltage DC Power	+24 to +60 VDC or -24 to -60 VDC 0.3A @ 48VDC
High Voltage DC Power Connector	Field-wireable 16-20 AWG Terminal Connector
PoE Power	+44 to +57 VDC or -44 to -57 VDC 0.27A @ 48VDC
PoE Connector	RJ-45 IEEE 802.3af-2003 Alternative A & B, Pre-standard Cisco PoE
AC Power Adapter [US]	100-120 VAC, 60Hz 0.2A @ 120VAC
AC Power Adapter [Universal]	100-240 VAC, 50-60 Hz 0.2A @ 120VAC
Dimensions	5.4" (W) x 6.8" (L) x 1.0" (H)
Weight	
without power adapter	1.5 lbs.
with power adapter	2.0 lbs.
Compliance	UL, CE, FCC, AS/NZS 3548, & VCCI Class A
Temperature	
Operational - Commercial	0 to +50ºC
Operational - Wide Range	-40 to +60ºC
Storage	-40 to +80ºC
Humidity (non-condensing)	5 to 95%
Altitude	-100m to 4000m
MTBF [hrs]	
without power adapter	540,000
with US power adapter	250,000
with Univ. power adapter	100,000

Table 7: Model Specifications

Refer to Table 1 for applicable product features.

Warning

The operating description in this Instruction Manual is for use by qualified personnel only. To avoid electrical shock, do not perform any servicing of this unit other than that contained in the operating instructions, unless you are qualified and certified to do so by Omnitron Systems Technology, Inc.

Caution

All user-required operations can be performed without opening the unit. Never attempt to open or remove the cover or tamper with the unit. There are no user replaceable or serviceable parts in this unit. Equipment is not intended to be installed and used in a place (home, school, or public area) accessible to the general population.

Warranty

This product is warranted to the original purchaser against defects in material and workmanship for a period of TWO YEARS from the date of shipment. A LIFETIME warranty may be obtained by the original purchaser by REGISTERING this product with Omnitron within 90 days from the date of shipment. TO REGISTER, COMPLETE AND MAIL OR FAX THE ENCLOSED REGISTRATION FORM. Or you may register your product on the Internet at http://www.omnitron-systems.com. During the warranty period, Omnitron will, at its option, repair or replace a product which is proven to be defective.

For warranty service, the product must be sent to an Omnitron designated facility, at Buyer's expense. Omnitron will pay the shipping charge to return the product to Buyer's designated US address using Omnitron's standard shipping method.

Limitation of Warranty

The foregoing warranty shall not apply to defects resulting from improper or inadequate use and/or maintenance of the equipment by Buyer, Buyer-supplied equipment, Buyer-supplied interfacing, unauthorized modifications or tampering with equipment (including removal of equipment cover by personnel not specifically authorized and certified by Omnitron), or misuse, or operating outside the environmental specification of the product (including but not limited to voltage, ambient temperature, radiation, unusual dust, etc.), or improper site preparation or maintenance.

No other warranty is expressed or implied. Omnitron specifically disclaims the implied warranties of merchantability and fitness for any particular purpose.

Exclusive Remedies

The remedies provided herein are the Buyer's sole and exclusive remedies. Omnitron shall not be liable for any direct, indirect, special, incidental, or consequential damages, whether based on contract, tort, or any legal theory.

7.0 TECHNICAL SUPPORT

If you encounter problems with this product, contact Omnitron Technical Support.

Phone: +1 800-675-8410 USA
+1 949-250-6510

Fax: 949-250-6514

Address: Omnitron Systems Technology, Inc.
140 Technology Dr., #500
Irvine, CA 92618

Email: support@omnitron-systems.com
URL: http://www.omnitron-systems.com